

94. Title: Efficient and widely step-tunable terahertz generation with a dual-wavelength CO₂ laser

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Abstract: Coherent terahertz radiation in a widely step-tunable range of 72.3-2706 μm (0.11-4.15 THz) has been generated in GaAs crystal by difference-frequency generation using one CO₂ laser with dual-wavelength output. The peak power of THz pulse reaches 35 W at the wavelength of 236.3 μm , which corresponds to a pulse energy of 2.1 μJ . An average power of 10 μW has been achieved when working repetitively. This efficient terahertz radiation source is more compact and widely tunable than other THz sources pumped by CO₂ laser.